1. A method for determining whether an individual is at risk for prostate cancer, comprising:

(a) obtaining a test sample comprising prostate cells taken from the individual;

(b) measuring the expression of alpha-methylacyl-CoA racemase in the test sample;

(c) determining that the individual is subject to prostate cancer if the expression of alpha-methylacyl-CoA racemase in the sample is greater than a predetermined value.

2. A method for determining whether an individual is at risk for prostate cancer, comprising:

(a) obtaining a test sample comprising prostate cells taken from the individual;

(b) measuring the activity of alpha-methylacyl-CoA racemase in the test sample;

(c) determining that the individual is subject to prostate cancer if the activity of alpha-methylacyl-CoA racemase in the sample is greater than a predetermined value.

3. A method for determining whether a prostate cancer patient is at risk for metastatic prostate cancer to the liver, comprising:

(a) obtaining a test sample comprising liver cells taken from the patient;

(b) measuring the expression of alpha-methylacyl-CoA racemase in the test sample;

(c) determining that the patient is at risk for metastatic prostate cancer to the liver if the expression of alpha-methylacyl-CoA racemase in the sample is greater than a predetermined value.

4. A method for determining whether a prostate cancer patient is at risk for metastastic prostate cancer to the liver, comprising:

(a) obtaining a test sample comprising liver cells taken from the patient;

(b) measuring the activity of alpha-methylacyl-CoA racemase in the test sample;

(c) determining that the patient is at risk for metastatic prostate cancer to the liver if the activity of alpha-methylacyl-CoA racemase in the sample is greater than a predetermined value.

5. A method for determining whether a prostate cancer patient is at risk for metastatic prostate cancer to the lymph nodes, comprising:

(a) obtaining a test sample comprising lymph node cells taken from the patient;.

(b) measuring the expression of alpha-methylacyl-CoA racemase in the test sample;

(c) determining that the patient is at risk for metastatic prostate cancer to the lymph nodes if the expression of alpha-methylacyl-CoA racemase in the sample is greater than a predetermined value.

6. A method for determining whether a prostate cancer patient is at risk for metastatic prostate cancer to the lymph nodes, comprising:

(a) obtaining a test sample comprising lymph node cells taken from the patient;

(b) measuring the activity of alpha-methylacyl-CoA racemase in the test sample;

(c) determining that the patient is at risk for metastatic prostate cancer to the lymph node if the activity of alpha-methylacyl-CoA racemase in the sample is greater than a predetermined value.

7. The method of any of claims 1, 3 and 5 wherein the step of measuring alpha-methylacyl-CoA racemase expression in the test sample comprises exposing the test sample to a nucleic acid molecule which hybridizes to a nucleic acid molecule comprising SEQ ID NO:1 under stringent conditions.

8. The method of claim 7 wherein the nucleic acid molecule is detectably labeled.

9. The method of any of claims 2, 4 and 6 wherein the step of measuring alpha-methylacyl-CoA racemase expression in the test sample comprises exposing the test sample to an antibody that selectively binds to alpha-methylacyl-CoA racemase.

10. The method of claim 9 wherein the antibody is detectably labeled.

11. A method for selecting an individual for therapy with a compound which decreases alpha-methylacyl-CoA racemase expression, the method comprising:

(a) obtaining a test sample comprising nucleic acid molecules present in a sample of the individual's prostate;

(b) determining the amount of alpha-methylacyl-CoA racemase mRNA in the test sample;

(c) comparing the amount of alpha-methylacyl-CoA racemase mRNA in the test sample to a predetermined value; and

(d) selecting the individual for therapy with a compound which decreases alpha-methylacyl-CoA racemase expression when the amount of alpha-methylacyl-CoA racemase mRNA in the test sample is greater than the predetermined value.

12. The method of claim 11 wherein the step of determining the amount of alpha-methylacyl-CoA racemase mRNA in the test sample comprises exposing the test sample to a nucleic acid molecule which hybridizes to a nucleic acid molecule comprising SEQ ID NO:1 under stringent conditions.

13. The method of claim 12 wherein the nucleic acid molecule is detectably labeled.

14. The method of any of claims 11-13 wherein stringent conditions comprise hybridization in 0.5 M $NaHPO_4$/7% SDS/1 mM EDTA at 65°C.

15. The method of claim 14 wherein stringent conditions comprise washing in 0.1%SDS/0.1X SSC at 68°C.

16. A method for selecting an individual for therapy with a compound which decreases alpha-methylacyl-CoA racemase expression, the method comprising:

(a) obtaining a test sample comprising nucleic acid molecules present in a sample of the individual's liver;

(b) determining the amount of alpha-methylacyl-CoA racemase mRNA in the test sample;

(c) comparing the amount of alpha-methylacyl-CoA racemase mRNA in the test sample to a predetermined value; and

(d) selecting the individual for therapy with a compound which decreases alpha-methylacyl-CoA racemase expression when the amount of alpha-methylacyl-CoA racemase mRNA in the test sample is greater than the predetermined value.

17. The method of claim 16 wherein the step of determining the amount of alpha-methylacyl-CoA racemase mRNA in the test sample comprises exposing the test sample to a nucleic acid molecule which hybridizes to a nucleic acid molecule comprising SEQ ID NO:1 under stringent conditions.

18. The method of claim 17 wherein the nucleic acid molecule is detectably labeled.

19. The method of any of ~~claims~~ 16-18 wherein stringent conditions comprise hybridization in 0.5 M $NaHPO_4$/7% SDS/1 mM EDTA at 65°C.

20. The method of claim 19 wherein stringent conditions comprise washing in 0.1%SDS/0.1X SSC at 68°C.

21. A method for selecting an individual for therapy with a compound which decreases alpha-methylacyl-CoA racemase expression, the method comprising:

(a) obtaining a test sample comprising nucleic acid molecules present in a sample of the individual's lymph node;

(b) determining the amount of alpha-methylacyl-CoA racemase mRNA in the test sample;

(c) comparing the amount of alpha-methylacyl-CoA racemase mRNA in the test sample to a predetermined value; and

(d) selecting the individual for therapy with a compound which decreases alpha-methylacyl-CoA racemase expression when the amount of alpha-methylacyl-CoA racemase mRNA in the test sample is greater than the predetermined value.

22. The method of claim 21 wherein the step of determining the amount of alpha-methylacyl-CoA racemase mRNA in the test sample comprises exposing the test sample to a nucleic acid molecule which hybridizes to a nucleic acid molecule comprising SEQ ID NO:1 under stringent conditions.

23. The method of claim 22 wherein the nucleic acid molecule is detectably labeled.

24. The method of any of claims 21-23 wherein stringent conditions comprise hybridization in 0.5 M $NaHPO_4$/7% SDS/1 mM EDTA at 65°C.

25. The method of claim 24 wherein stringent conditions comprise washing in 0.1%SDS/0.1X SSC at 68°C.

26. A method for selecting an individual for therapy with a compound which decreases alpha-methylacyl-CoA racemase expression, the method comprising:

(a) obtaining a test sample comprising polypeptides present in sample of the individual's prostate;

(b) determining the amount of alpha-methylacyl-CoA racemase polypeptide in the test sample;

(c) comparing the amount of alpha-methylacyl-CoA racemase polypeptide in the test sample to a predetermined value; and

(d) selecting the individual for therapy with a compound which decreases alpha-methylacyl-CoA racemase expression when the amount of alpha-methylacyl-CoA racemase polypeptide in the test sample is greater than the predetermined value.

27. The method of claim of claim 26 wherein the step of determining the amount of alpha-methylacyl-CoA racemase polypeptide in the test sample comprises exposing the test sample to a compound which binds to an alpha-methylacyl-CoA racemase polypeptide.

28. The method of claim 27 wherein the compound is an antibody.

29. The method of claim 28 wherein the antibody is a monoclonal antibody.

30. The method of claim 29 wherein the compound is selected from the group consisting of a single chain antibody, a Fab, and an epitope-binding fragment of an antibody.

31. The method of claim 26 wherein the compound is detectably labeled.

32. The method of claim 31 wherein the detectable label is selected from the group consisting of a radioactive label, a fluorescent label, a chemiluminescent label, and a bioluminescent label.

33. A method for identifying candidate therapeutic agents for the treatment of prostate cancer, the method comprising:

(a) obtaining a test sample comprising prostate tumor cells;

(b) exposing the test sample to a test compound;

(c) measuring the level of expression of alpha-methylacyl-CoA racemase mRNA in the test sample exposed to the test compound;

(d) determining that the test compound is a candidate therapeutic agent for the treatment of prostate cancer if the level of expression of alpha-methylacyl-CoA racemase mRNA in the test sample exposed to the test compound is less than a predetermined value.

34. The method of claim 33 wherein the step of measuring the level of expression of alpha-methylacyl-CoA racemase mRNA in the test sample comprises exposing the test sample to a nucleic acid molecule which hybridizes to a said alpha-methylacyl-CoA racemase mRNA under stringent conditions.

35. A method for identifying candidate therapeutic agents for the treatment of prostate cancer, the method comprising:

(a) obtaining a test sample comprising prostate tumor cells;

(b) exposing the test sample to a test compound;

(c) measuring the level of expression of alpha-methylacyl-CoA racemase polypeptide in the test sample exposed to the test compound;

(d) determining that the test compound is a candidate therapeutic agent for the treatment of prostate cancer if the level of expression of alpha-methylacyl-CoA racemase polypeptide in the test sample exposed to the test compound is less than a predetermined value.

36. The method of claim of claim 35 wherein the step of measuring the level of expression of alpha-methylacyl-CoA racemase polypeptide in the test sample comprises exposing the test sample to a compound which binds to a said alpha-methylacyl-CoA racemase polypeptide.

37. The method of claim 36 wherein the compound is an antibody.

38. The method of claim 37 wherein the antibody is a monoclonal antibody.

39. The method of claim 37 wherein the compound is selected from the group consisting of a single chain antibody, a Fab, and an epitope-binding fragment of an antibody.

40. The method of claim 36 wherein the compound is detectably labeled.

41. The method of claim 40 wherein the detectable label is selected from the group consisting of a radioactive label, a fluorescent label, a chemiluminescent label, and a bioluminescent label.

42. A method for determining whether a therapeutic treatment should be continued, the method comprising:

(a) obtaining a first sample comprising nucleic acid molecules present in prostate tumor cells obtained from a patient at a first time;

(b) obtaining a second sample comprising nucleic acid molecules present prostate cells obtained from the patient at a second, later time;

(c) measuring the expression of alpha-methylacyl-CoA racemase mRNA in the first and second samples; and

(d) determining that the therapeutic treatment should be continued when the expression of alpha-methylacyl-CoA racemase mRNA in the second sample is less than or equal to the expression of alpha-methylacyl-CoA racemase mRNA than in the first sample.

43. The method of claim 42 wherein the step of measuring the level of expression of alpha-methylacyl-CoA racemase mRNA in the samples comprises exposing the samples to a nucleic acid molecule which hybridizes to a said alpha-methylacyl-CoA racemase mRNA under stringent conditions.

44. A method for determining whether a therapeutic treatment should be continued, the method comprising:

(a) obtaining a first sample comprising prostate tumor cells obtained from a patient at a first time;

(b) obtaining a second sample comprising prostate tumor cells obtained from the patient at a second, later time;

(c) measuring the expression of alpha-methylacyl-CoA racemase polypeptide in the first and second samples; and

(d) determining that the therapeutic treatment should be continued when the expression of alpha-methylacyl-CoA racemase mRNA in the second sample is less than or equal to the expression of alpha-methylacyl-CoA racemase polypeptide than in the first sample.

45. The method of claim of claim 44 wherein the step of measuring the level of expression of alpha-methylacyl-CoA racemase polypeptide in the samples comprises

exposing the samples to a compound which binds to an alpha-methylacyl-CoA racemase polypeptide.

46. The method of claim 45 wherein the compound is an antibody.

47. The method of claim 46 wherein the antibody is a monoclonal antibody.

48. The method of claim 46 wherein the compound is selected from the group consisting of a single chain antibody, a Fab, and an epitope-binding fragment of an antibody.

49. The method of claim 48 wherein the compound is detectably labeled.

50. The method of claim 49 wherein the detectable label is selected from the group consisting of a radioactive label, a fluorescent label, a chemiluminescent label, and a bioluminescent label.

51. A method for treating prostate cancer comprising administering a compound which increases the expression or activity of alpha-methylacyl-CoA racemase.

52. A method for identifying candidate therapeutic agents for the treatment of prostate cancer, the method comprising:

(a) obtaining a test sample comprising prostate tumor cells;

(b) exposing the test sample to a test compound;

(c) measuring the level of activity of alpha-methylacyl-CoA racemase in the test sample exposed to the test compound;

(d) determining that the test compound is a candidate therapeutic agent for the treatment of prostate cancer if the level of activity of alpha-methylacyl-CoA racemase mRNA in the test sample exposed to the test compound is less than a predetermined value.

53. The method of claim 52, wherein the activity is measured using a coupled assay.

54. An isolated nucleic acid molecule comprising a nucleotide sequence selected from the group consisting of SEQ ID NO:1, SEQ ID NO:3, SEQ ID NO:4, SEQ ID NO:6, SEQ ID NO:8, and SEQ ID NO:10.

55. An isolated nucleic acid molecule comprising a sequence that encodes a polypeptide comprising an amino acid sequence selected from the group consisting of SEQ ID NO:2, SEQ ID NO:5, SEQ ID NO:7, SEQ ID NO:9, or SEQ ID NO:11; or SEQ ID NO:2, SEQ ID NO:5, SEQ ID NO:7, SEQ ID NO:9, or SEQ ID NO:11 with conservative amino acid substitutions.

56. An isolated polypeptide comprising the amino acid sequence of SEQ ID NO:2, SEQ ID NO:5, SEQ ID NO:7, SEQ ID NO:9, or SEQ ID NO:11; or SEQ ID NO:2, SEQ ID NO:5, SEQ ID NO:7, SEQ ID NO:9, or SEQ ID NO:11 with conservative amino acid substitutions.

57. The method of claim 33 or claim 35, further comprising,

e) administering the identified candidate compound to a rodent harboring prostate cancer cells or cells from a cancer resulting from metastasis of a prostate cancer; and

f) determining whether the identified candidate compound reduces the proliferation of the cells.

58. The method of claim 57, wherein the cells are in a xenograft.